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Adaptation of Mycoplasma gallisepticum to unfavorable growth conditions: Changes in morphological and physiological characteristics

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Abstract

Adaptation of Mycoplasma gallisepticum to unfavorable growth conditions results in altered morphological and physiological characteristics of the cells. M. gallisepticum populations in a complete nutrient medium contain pear-shaped vegetative cells (d - 0.3 μm; l - 0.8 μm) with pronounced polar and cytoskeletonlike structures. Such mycoplasma cells are able to induce damage in a bacterial genome, causing an SOS response of the test strain (Escherichia coli PQ37). In a starvation medium, M. gallisepticum produces nanoforms, small coccoid cells (d - 0.15-0.2 μm) without either polar or cytoskeleton-like structures. Unlike vegetative cells, nanoforms do not induce genome damage. Alleviation of unfavorable growth conditions results in a reversion of nanoforms to vegetative cells. © 2008 MAIK Nauka.

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Keywords

Adaptation, Cell ultrastructure, Mycoplasmas, Nanoforms, SOS response